

# HomePage



: *PlanetPhysics.org* Logo -wiki

## Welcome to the PlanetPhysics wiki!

- This site is meant to supplement the *Main Noosphere web site* as a place to discuss the organization, physics-related topics, and the like.
  - Now you can access directly the original Noosphere website and also register at *planetphysics.us*. The registration is **FREE** and **allows users to contribute and/or archive their articles and contributions on PlanetPhysics.org websites**.
    - Data Sets uploads will be also accepted up to a maximum size of 40Mb in any of the standard formats such as XLS, PDF, doc, opendoc, ps, html, etc. as a complement and supplement to the *Data Conservancy efforts*, however with any time restrictions placed upon data stored or contributed freely by the users.
  - We are also in the process of setting up an **updated Noosphere instance** that will serve as a transition website to host future content with downwards compatible entries.

## Mission of PlanetPhysics.org

- *PlanetPhysics.org* is a virtual community which aims to help make physics knowledge more accessible, as well as to further develop physical concepts.

## User Pages

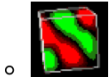
*Users: This is a users oriented website, and newphysics contributors and contributions are welcome!*

## Sandbox

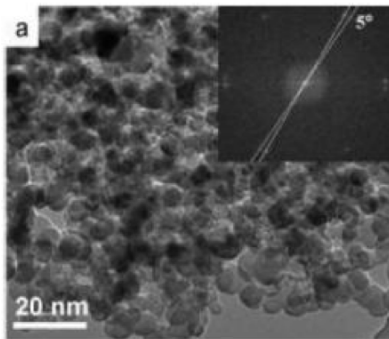
- *Sandbox: Here you can test writing your own draft of an entry and find out the level of your wiki skills.*

## Quantum Mechanics and Quantum Field Theories

- *Quantum Mechanics*
- *Concise History of Quantum Mechanics and Related Experiments*



- *Quantum News-- "Quantum Dots might Hold the Energy Future"*
- *Quantum Nanodots and Low-cost Solar Cells*



- *Quantum Algebraic Topology*
- *Non-Abelian Quantum Algebraic Topology*



- *Higher Dimensional Algebra*



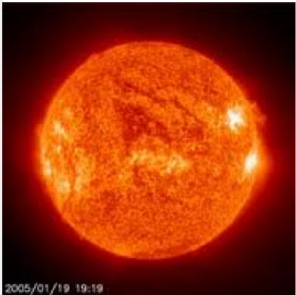
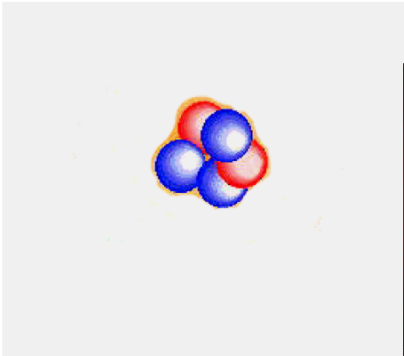
- *Quantum Algebra and Symmetry*

◦ Quantum Geometry



Plasma Physics

- Plasma Wave Excitation



- Nuclear Fusion animation
- University of Wisconsin Nuclear Reactor Tour
- Plasma Fusion
- 

Solar Energy: Science and Technology

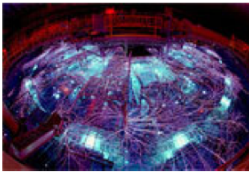


- Solar Energy

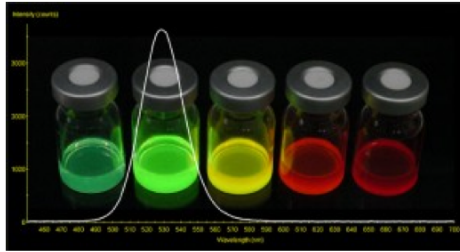


In the News !

- AIP Chinese language site launched on June 17th 2011
- EAST Xinhua Model
- 
- More Physics News
- The Chinese NF reactor temperature record reported in 2007 : "50 Million degrees Kelvin"
- Z Machine Record

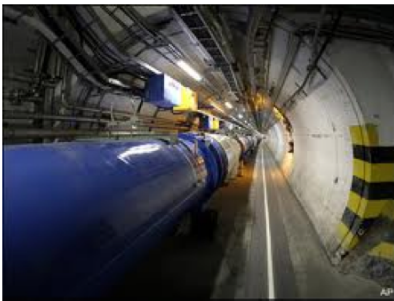


- - "3.6 Billion degrees C in the lab !", reported from Sandia Labs
- Quantum Dots from NASA

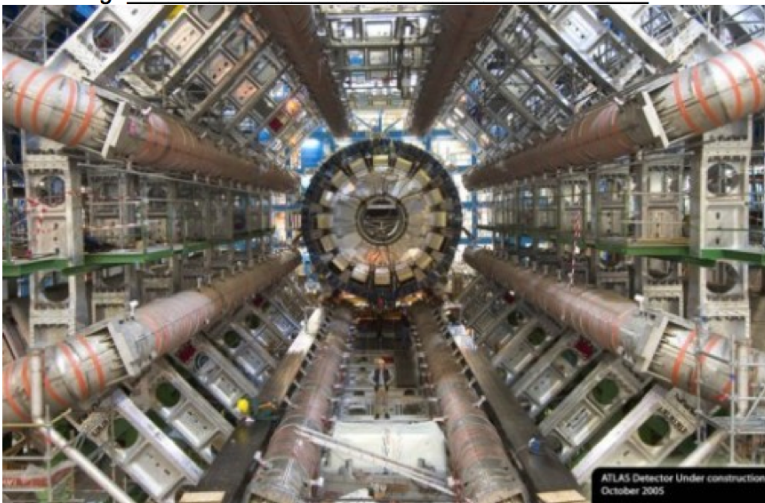


- Nanophysics, Nanotechnology and Nanomedicine

## High Energy Physics and Particle Accelerators

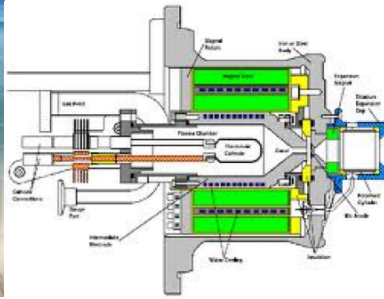
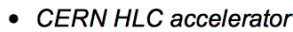


- 
- Standard Model Animation
- HLC Image



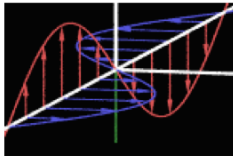
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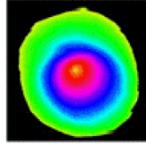




- [Animation website link](#)



- [Wave Propagation.](#)
- [The awesome Resonata animation 'Wave Machine': It is so fast that you must slow it down by setting the Depth parameter to at least](#)



219 !—amazingly beautiful displays: [Resonant screensh27](#)

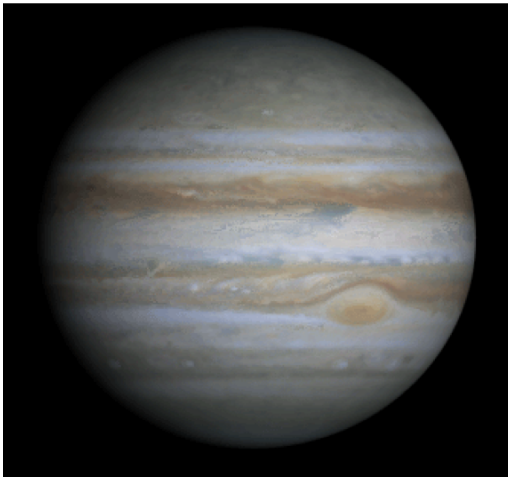
## Theoretical and Mathematical Physics

- [Axioms of Physics](#)
- [Einstein's Relativity Theory](#)
  - [Einstein's Field Equations in General Relativity](#)

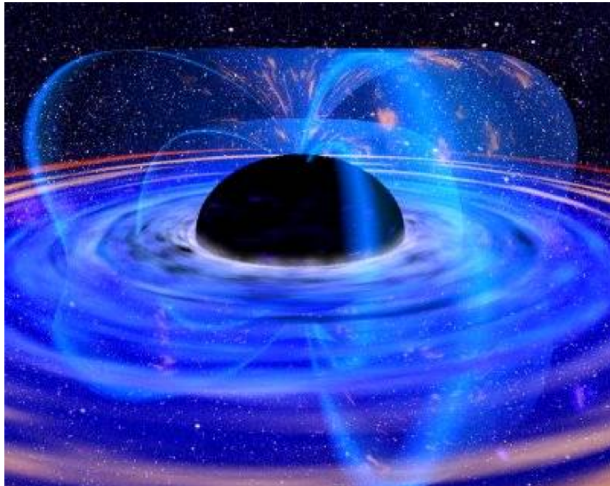


- [Gravitation](#) —3D-Vector Field Animation at Falstad

## Astrophysics



- [Jupiter photo animation](#) from NASA 's Goddard's Center



- [Pulsar Animation Demo](#) (under your control!)

## Solar Physics

## Geophysics

## Atomic Physics

- *Atomic and Nuclear Structure*

## Nuclear Physics and Engineering

- Nuclear Fission reactors and Nuclear Fusion
- *Chinese News on Fusion*



- - A Chinese mini Model of an 'Artificial Sun' (EAST)
- *Nuclear Magnetic Resonance (NMR)*

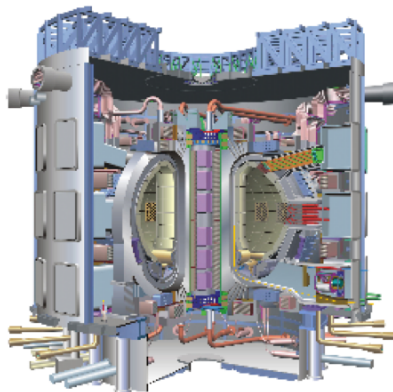
## Applied Physics

## Medical Physics and Biophysics

## "Alternative Energy"

### Sustainable Energy Systems

- Solar Power
- Nuclear Fusion Experiments and Experimental Fusion Reactors: JET, NSTX, LTX,
  - JT-60 (Japan Torus),
  - Tokamak Fusion Test Reactor(TFTR), and other tokamaks
  - *ITER*



- 
- *Nuclear Fusion News*



- - *Levitated Fusion*
- Wind Generators
- Hybrid Power Generation


## Conventional Power Generation

- Hydroelectric Power Generation;
- Geothermal Power Generation;
- Hybrid Transport Systems;

## General concepts


- *List of General concepts*
  - *Observable* | *Gravity* | *Light*
  - *Waves & Wave animation*
  - *Harmonic motions Animation*
  - *Temperature* | *Heat*
  - *Electric Charge* | *Electric Field* | *Electron* | *Muon* | *Fermion*
  - *Particle* | *Proton* | *Neutron* | *Neutrino*
  - *Lepton* | *Hadron* | *Boson*
  - *Physical system*:
    - Physical observations    Physical quantity
    - Physical experiment
    - Physical state    Physical unit    Physical theory

## Theoretical Concepts and Physical Laws

- *Basic quantities*
- *General Concepts*
- *In Thermodynamics*
- *In Mechanics and Relativity Theories*
  - *Moment of inertia*
- *In Electromagnetism, Heat, etc.*
  - *Equations*
- 
- **Fourier Series and FTs**
- *In Quantum theories*:
  - *Quantum Theory Equations*:
    - *Quantum Hamiltonian operator*
    - *Schrödinger's wave equation*
  - *Heisenberg Uncertainty Principle*
  - *Goldstone theorem*
- *Relational theories*
  - *Categories in Physics*

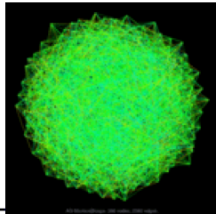
- *Chaotic Dynamics*



- *Euler's formula*  *Euler Equations-An Animated Illustration*

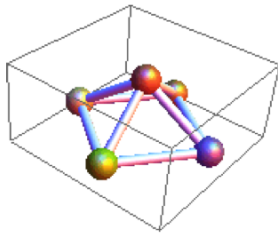
## Web Links to Computational and Software Tools for Physics

- *Physical Quantities*
- *Units and Measures*

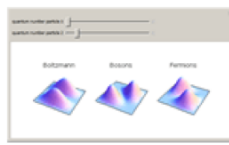


- *Drawing Large Graphs*—
  - *Graph visualization is a way to discover and visualize structures in complex relations*
  - *GraphPlot in Mathematica v. 6.0*
  - *GraphPlot3D*







- 
- *Table of Fourier and Generalized Fourier Transforms*
  - *Interactive 2D-FT*
  - *XFT2D: A 2D Fast Fourier Transform-- Wolfram Demo Project*
  - *Fractional Fourier Transform, Wolfram Demo*
- *Table of Laplace Transforms*
  - *Numerical Inversion of the Laplace Transform*
- *Physics Course Assistant application on iPad*
- *"Free Maple Program for Instructors: Maple Adoption Program"*
- *Abstract Algebra in GAP*
- *Maple Program- Introduction*
- *Basics of Programming in Maple*
- *Maple outline*
- *Computational Group Theory*
  - *Exposition of Computational Group Theory*
  - *Algorithms of Representation Theory*
- *GAP- Groups, Algorithms, Programming - a System for Computational Discrete Algebra*
  - *Free GAP Download*
    - *Gap Installation*
- *CREP*
  - *Free CREP Downloads*
- *Link to Wolfram's Mathematica Demonstrations Project: **Links to Selected Mathematica Animations and Demos***
  - -- All demo files require the *Wolfram CDF Player* or *Mathematica Free trial*
  - *Franck-Hertz Experiment*
  - *Charged Particle in a Uniform Magnetic Field*
  - *Diffraction Grating Experiment*
  - *Lyapunov Fractals*
  - *Rosler Attractor*
  - *3D Graphics*
    - *Laplace Equation on a Circle*
    - *Vibrating Circular Membrane*
    - *Damped 3D Lissajous Figures*
    - *Euler Angles: Precession, Nutation, and Spin*
    - *3D Rotation Is Non-Abelian*
    - *Rotational Symmetries of Colored Platonic Solids*
    - *Steady Flow over a Rotating Disk: von Kármán Swirling Flow*
    - *Lorenz Attractor*
    - *Mathematics of Tsunamis*
    - *Cuboctahedron--Zeolite unit cell*
    - *Generalized Arrhenius Functions*
    - *Self-Organization: Idealized Belousov-Zhabotinsky Reaction*
    - *3D Molecular Model of a Mutant of the Human Insulin Molecule*
  - *Quantum Mechanics*
    - *The Photoelectric Effect*
    - *Blackbody Spectrum-- An Interactive Demo*
    - *1D Schrödinger Equation for a Harmonic Oscillator*



- *Wave Functions of Fermions and Bosons--*
- *Animation of Klein-Nishina Calculation for Photon-Electron (Compton) Scattering*
- *Visualizing Atomic Orbitals*
  - *Download*
- *Soliton Trajectories of the mKdV Equation*
- *The Klein Paradox in 1D QED*

- Feynman's Relativistic Electrodynamics Paradox
- Spherical Harmonics by Dr. S. Wolfram
- Anharmonic Oscillator Phase Space Trajectories 2D
- Interactive demo of the Brillouin Zone of a 2D Square Lattice
- BIREP 1978 - 2010 (Archive) Representations of Finite Dimensional Algebras and Quantum Groups at Bielefeld (Germany)

## The PlanetPhysics Collection: Backups of All PlanetPhysics Entries

- All previous Encyclopedia entries are also available here in their original form from the following linked list, generated from the Noosphere v.1.02 snapshot of 01/01/2011, as well as an updated snapshot generated on 06/24/2011.
- Current version of the Encyclopedia and Noosphere at PlanetPhysics.org
- PlanetPhysics's **content is created collaboratively**; the main features of *PlanetPhysics* are:
  - PlanetPhysics Encyclopedia,
    - Biographies on PlanetPhysics.org
    - Topics on PlanetPhysics.org
  - Expositions and Papers— with entries written and reviewed by members,
    - The Papers section functions also as an **electronic/cyber archive of preprints, published papers and reprints**, as well as:
  - The **Books section**
    - A large number of downloadable physics and mathematical physics books and textbooks:
    - Books
    - PM Encyclopedia Book in 2005 of 36Mb; current contents at 80Mb PDF
    -  PM Book Entries
    - PM Books Index Page 1; \*\*\* PM Books Index Page 2; \*\*\* PM Books Index Page 3; \*\*\* PM Books Index Page 4
    - PM Books Index Page 5; \*\*\* PM Books Index Page 6; \*\*\* PM Books Index Page 7; \*\*\* PM Books Index Page 8
    - PM Books Index Page 9:
      - **Active links to all individual book entries** 

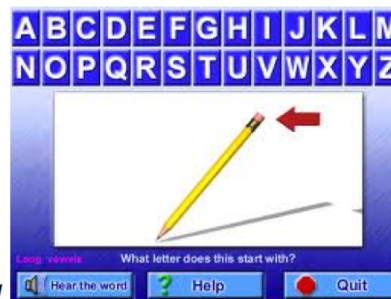
## Snapshots

- Latest Snapshots
  - June 24th 2011 Snapshot
    - Backup of PlanetPhysics.org from January 01, 2011
- PlanetPhysics(redux) Developmental website

## Overview of the Contents of PlanetPhysics

### The PlanetPhysics.org Encyclopedia Collection

- Encyclopedia Entries



- Alphabetic listing of Encyclopedia 1.02 as of 01/01/2011
- NewNoosphere 1.4 PlanetPhysics Developmental Server: current Encyclopedia entries beginning June 14, 2011
- newnoosphere 1.45-Encyclopedia List only, at this time- June 27th, 2011 update
- NewNoosphere v.1.5 PlanetMaths Developmental Server: Current Encyclopedia entries beginning June 14, 2011: all modes available
  - --APS Alphabetical Listings #1
  - --ScienceWM Alphabetical Listings #2
- PlanetMath Encyclopedia entries
  - Selected Examples
- Overview pages
  - Overview of PlanetPhysics Contents: Noosphere v. 1.02
  - Noosphere page— web cached

- *Noosphere v.1.02 Overview page cached*
- Overview continued with subsections:
  - *Index of PlanetPhysics Contributors \*\*\* Biographies \*\*\* Literature \*\*\* Basic Physics References*
  - *Table of PlanetPhysics Wiki Contents \*\*\* Index; Noosphere; ns-MySQL-all*
- *Current Summary of Planet Physics Collection*

	1	2	3	4	5	6	7	8	9
units	<b>A</b> alpha	<b>B</b> beta	<b>Γ</b> gamma	<b>Δ</b> delta	<b>E</b> epsilon	<b>F</b> digamma	<b>Z</b> zeta	<b>H</b> eta	<b>Θ</b> theta
tens	<b>I</b> iota	<b>K</b> kappa	<b>Λ</b> lambda	<b>M</b> mu	<b>N</b> nu	<b>Ξ</b> xi	<b>O</b> omicron	<b>Π</b> pi	<b>ϱ</b> qoppa
hundreds	<b>P</b> rho	<b>Σ</b> sigma	<b>T</b> tau	<b>Υ</b> upsilon	<b>Φ</b> phi	<b>X</b> chi	<b>Ψ</b> psi	<b>Ω</b> omega	<b>Λ</b> sampi

units	A 1	B 2	C 3	D 4	E 5	F 6	G 7	H 8	I 9
tens	J 10	K 20	L 30	M 40	N 50	O 60	P 70	Q 80	R 90
hundreds	S 100	T 200	U 300	V 400	W 500	X 600	Y 700	Z 800	

-Special Symbols and Letters in TeX

## See also

- *Novel Research Institute*
- *PlanetMath*
- *The Global Network of Science Academies*
- *Open Science*

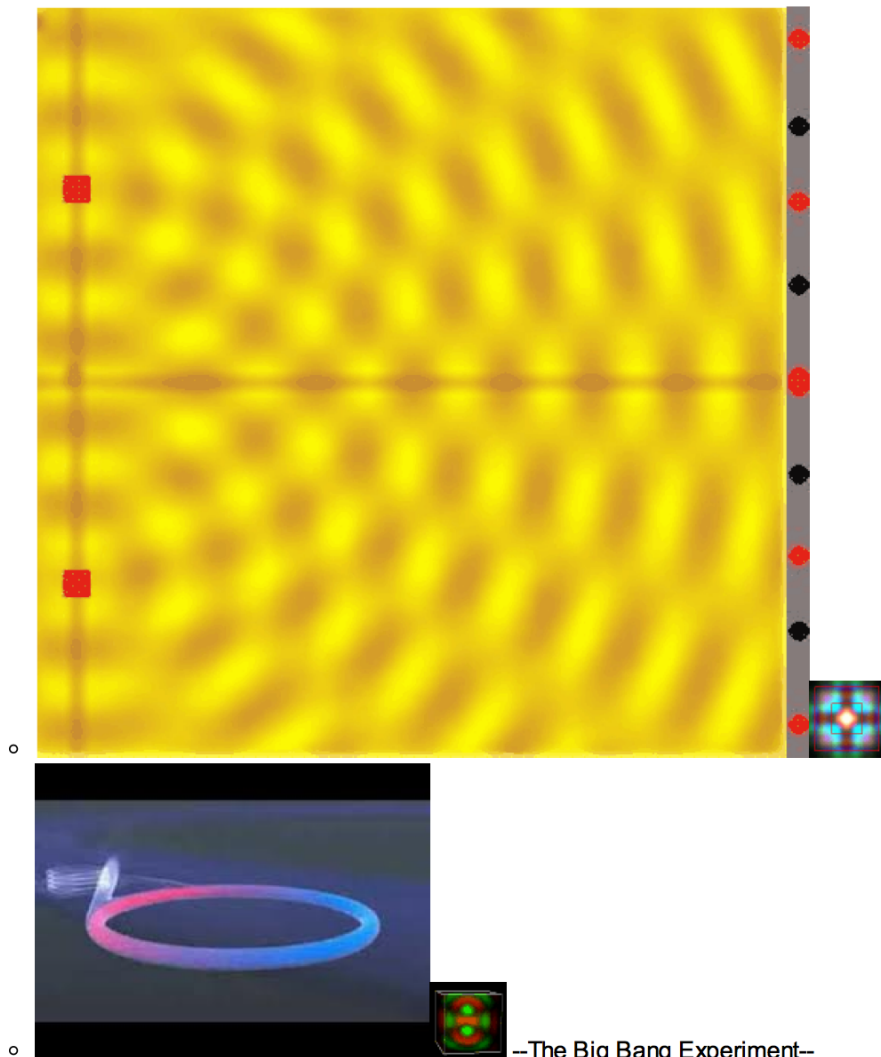
## Not Even Wrong !

- *Item 1-Cycle of Time controversy*

## Other External Links, page 1

- *AIP.org* is the website of the *American Institute of Physics*
- *IOP.org* The website of the "*Institute of Physics*"
- *APS.org* The website of the "*American Physical Society*"
- *Physics Preprint Web Archives* (since October 1996)
- *ScienceWISE*--annotation of arXiv by authors
- "*Big Physics requires Big Maths*"
- *The National Academy of Sciences (NAS)*
- *History of quantum mechanics*
- *PhysOrg.com* and *Physics Newsletter*
- *Modeling Biosystems*
- *Mathematical and Theoretical Physics at IHES*
- *French Academy of Sciences*
- *L'Institut des Hautes Études Scientifiques (IHÉS)*
- *SPS National* is the website of the *American Society of Physics Students*
- *ARA*
- *EPS.org* The website of the *European Physical Society*
- *Physics news*
- *CERN Preprints Document and Preprint Server*
- *Crystallography and Principles of Protein Structure Course (PPS)*
- *AFC-NMR and NIR Microspectroscopy Facility*
- *Mathematical and theoretical biology*
  - *Mathematical Sciences*
- *My Experiment:*





- *Animation Movie of the Big-Bang High Energy Experiment*

## External Links, page 2

... *More external links*

- **All contents are automatically backed up daily and are generated in TeX;**
  - The TeX preambles suitable for physics and mathematics articles are automatically available to the users when new objects or articles are created online at the *PlanetPhysics.org* websites.
  - The entries are contributed under the terms of the GNU Free Documentation License (FDL) in order to preserve the rights of both the authors and readers in a sensible way.

## Categories

- *Category : Research*
  - Web Search-at arXiv: *Categories within Physics*
  - Category:Articles
- Category:Reference
  - Category:Education
  - Category:Encyclopedia
  - Category:Books
- Category:Open
  - Category:Relational
  - Category:Design
  - Category:Repositories and Collaborations for Open Science and Design

## PlanetPhysics.org Wiki Entries

- *Wiki Entry List*
- *Wiki HomeP Backup*

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*Web counter*

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